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## ARCTIC EXPLORATION.

BY

THE REV. B. F. DE COSTA.

At an early period navigators directed their enterprise towards the north. Encouragement to explore a region invested with mystery and romance was found in the fact that great currents, both in the sea and the air, were ready to serve as guides and help them on their way. Nature appears partial towards the north, as the equator of heat is by no means coincident with the equatorial line. In portions of the Pacific the equator of heat indeed runs south of the geographical equator, but elsewhere it sweeps ten degrees north of the line, and from thence hot waves are thrown off towards the pole. When battling his way towards the high latitudes, man acts in sympathy with the mightiest forces of nature. The magnetic needle, pointing steadfastly towards the north, is the index of his mind. This joint tendency of nature and man is prophetic and tells of a triumphant result.

When or under what circumstances the first arctic voyage was made is not now known. At the dawn of history, the northern regions were represented as the realm of perpetual night. There, upon the border of a vast sea, the Cimmerians dwelt in the congenial gloom, their habits forming the theme of grotesque fables. The earliest maps, however, show the polar regions as occupied by a watery waste, while there are few statements that come to us from that early period which are more definite than that of Scymnus of Clio, who flourished about 900 years B. C., and who says, in his Fragments, "that at the extremity of the Celts is a boreal peak ; it is very high and sends out a cape into a stormy sea."\* Letronne thinks that  $\Sigma\tau\eta\lambda\eta$  is a poetical expression, indicating some mountain chain, whose peak performed the same office in the north that was filled by Etna in the south, Caucasus in the east, and Atlas in the west.

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\* "Fragments des poemes Géographiques de Scymnus de Clio," &c. By M. Letronne (p. 66).

The earliest voyage to the north is that claimed for Pytheus, the distinguished Phenician astronomer and geographer of Marseilles, who flourished 320 B. C. His works were extant in the fifth century, but are no longer found. Pliny and Eratosthenes gave full credit to his narrations, though Strabo shows great hostility to Pytheus, whose accounts he refused to receive, saying that he made "use of his acquaintance with astronomy and mathematics to fabricate his false narrative."\* Pliny, however, with more reason, thought that he employed his knowledge in practical exploration. The latest editor of Strabo does not share in his author's doubt. According to Pliny and others, Pytheus sailed through the Straits of Gibraltar, making his way north to the British isles, whither it was the custom of his countrymen to resort, and, after traveling over England on foot, proceeded northward to a place called "Thule," six days' sail from the northern part of Britain.† Strabo points out serious errors in his account of England, but the errors in the main may be attributed to transcribers; by whom Timœus is made to call Vectis, the Isle of Wight, "Mictis," and put it at six days' sail from Britain. In Pliny's time those regions were well known, and he speaks of "writers who make mention of some other islands—Scandia, namely, Dunna, Bergos and, greater than all, Nericos, from which persons embark for Thule. At one day's sail from

\* Strabo, B. VII. c. 3, 1.

† Pliny, *Nat. Hist.*, B. II., c. 75; and B. IV., c. 13, 30, 36. Strabo says: "It is true that Pytheus of Marseilles affirms that the farthest country north of the British islands is Thule, for which he says the summer tropic and the arctic circle is all one. But he records no other particulars concerning it, whether Thule is an island, or whether it continues habitable up to the point where the summer tropic becomes one with the arctic circle." (B. II., c. v., 8.) Strabo's editor says on this, that the summer tropic being placed at 24 degrees from the equator by Strabo, and most probably by Pytheus, the latitude of Thule or Iceland would be fixed at 66° N., which corresponds with the north of Iceland, where the two tropics would join and become one. To the foregoing may be added another criticism on Strabo, which has an effect opposite to that intended, as the "marine sponge" is nothing but the soft ice which forms in the north. "It is likewise he who describes Thule and other neighboring places where, according to him, neither earth, water nor air exists separately, but a sort of concretion of all these resembling marine sponge in which the earth, the sea, and all things were suspended, thus forming as it were a link to unite the whole together. It can neither be traveled over, nor sailed through." (Book II., c. iv., 1.)

Thule," he adds, "is the frozen ocean, which by some is called the Cronian sea."\*

There has been a division of opinion respecting the locality of the place forming the point of departure for Thule, or Iceland. By some, Scandia is identified with Scandinavia, Bergos with the modern Bergen, and Nerigos as the northern part of Norway, though Gosselin is of the opinion that Bergos refers to the Scottish island of Barra, and Nerigos, to one of the northern promontories called "Nery." However this may be, it is evident that, in the time of Pliny, and long before, there were those who knew of the island of Iceland, which was reached either from the Orkneys or from the coast of Norway. We incline strongly to the latter opinion, as Bergen, in Norway, from time immemorial, has been a point of departure for Iceland.

While the classic geographer knew much about the north, it is also reasonable to infer that the waters of the sea towards New Found-land had been frequented by Europeans engaged in the fisheries, and that, by degrees, they sailed to the coasts of Greenland and America. It is true that Iceland appears to have been generally unknown to the Scandinavians until the year 864, but the people of Great Britain were well acquainted with that lonely isle long before.

The earliest known movement northward from England was that inaugurated by King Arthur, about the year 505. The authority on this subject is Geoffrey of Monmouth, who was bishop of Saint Asaph in 1152, and who wrote the *Historia Britonum*, a work which afforded a basis for the fables and romances of the "Knights of the Round Table." Nevertheless, whoever inclines to turn from all the statements of Geoffrey, for the reason that they contain much that is untrue, should ponder the well-considered words of Hume, who says of the Prince of Silures: "This is that Authur so much celebrated in the songs of Thaliessin and the other British bards, and whose military achievements have been blended with so many fables as even to give occasion for entertaining a doubt of his real existence. But poets," he continues, "though they disfigure the most certain history of their fictions, and use strange liberties with truth, where they are the sole historians, as among the Britons, have commonly

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\* Pliny, B. IV., c. 30.

some foundation for their wildest exaggerations.”\* The Bishop of Saint Asaph, who was not a poet, may be credited, therefore, when he states such simple facts as that, about the year 505, King Arthur, after the conquest of Ireland, received the submission of the Orkneys and sailed to Iceland, “which he also subdued;” at a subsequent period overcoming his foes in Norway.† The conquest of Ireland cost much bloodshed, but that of Iceland, if he went there, must have been made without a struggle, since at that period there could not have been men enough to make any great resistance.‡

Hakluyt, treating this matter, quotes from Galfridus Monumtensis, who says that, after subduing Ireland, Arthur went to Iceland, and “brought it and the people thereof under his subjection.”§ The same author mentions “Maluasius” as “King” of Iceland, and tells of soldiers that he furnished.|| The “King,” however, may be reduced to a figure of speech, while there could have been no soldiers, unless, indeed, Arthur, as elsewhere stated, transported people to the north. Hakluyt also quotes Lambord, to the effect that Arthur made his way to Greenland; ¶ but we can understand how the statement originated, since the map of Ptolemy made Greenland a western extension of Norway, the position of the country being misunderstood. It was very easy, therefore, for modern chroniclers to suppose that Arthur took Greenland on his way in his expedition to Norway; hence this error.

Waurin, who wrote in the 14th century, before the influence of Ptolemy’s maps was generally felt, does not mention Greenland, though he says that Arthur carried the war into Iceland and fought with the Icelanders, whom he brought into subjection.\*\*

Geoffrey of Monmouth does not allude to Greenland. Nevertheless, he is our authority for the statement that Arthur went to

\* Hume’s *England*, I., p. 38. Ed. 1822.

† Geoffrey’s *History*, B. IX., c. 10.

‡ In the year 970, voyagers from Iceland found money on an island at the west. See “*Pre-Columbian Discovery of America by the Northmen*.” Munsell, 1868, p. 14.

§ *Navigations*, I., 1.                   || *Ibid.*, I., 2.                   ¶ *Ibid.*

\*\* In *Chroniques*, I., Lib. III., c. xix., p. 370, we read; “Et puis transporta le Roy Artus sa bataille en yrlande ou pareillement il se combaty et victorya les Islandais et myst en sa subjection.”

Iceland. It is possible that the Bishop of St. Asaph *inferred* that the northern island visited was Iceland, and it is also possible that, in such a case, he may have been in error ; but this treatment of his statement is not required. That Arthur could have sailed to Iceland, admits of no doubt ; nor is there any reason for holding that there were no inhabitants there in 505. The fact that the Northmen found only a few monks in Iceland in 864, does not prove that the same was true 250 years earlier. Bede, who died in 725, knew of Iceland ;\* and the Prologue of the *Landnamabok* speaks of both Irish and English books found there when the Northmen arrived.† Dicuil teaches that monks were in Iceland in 795 ; for, writing in 825, he says that thirty years had passed since some clerks (*clericī*), who had dwelt in the island, told him certain things. He also says that those who in their writings had described Iceland as surrounded by a sea of ice were quite wrong, and he proves the truth of his own account by the testimony of “clerks who had voyaged to this island.” He admits, however, that in voyages to the *north* of Iceland “they have found the sea frozen.”‡ Dicuil also testifies that there are numerous islands two days and two nights to the north of Britain, and that a “Religious, worthy of faith,” told him of a visit made by him in a small boat to one of these islands, which nearly a hundred years before was inhabited by Eremites, from Scotland. But Dicuil says that these regions were abandoned on account of the ravages of the northern pirates, who were as innumerable as “the birds of the sea.” Thus it appears that Iceland was well known to the people of the British isles long before it was inhabited by men from Norway, and we can readily understand how the population that probably existed in Arthur’s time may have been reduced by piratical incursions, until, in 864, the Norwegians found only a few anchorites dwelling there. The narrative of Geoffrey of Monmouth is, therefore, perfectly consistent with known facts, and the expedition of Arthur to Iceland may be regarded as historic.

It is now apparent that, in the century before Dicuil dated his

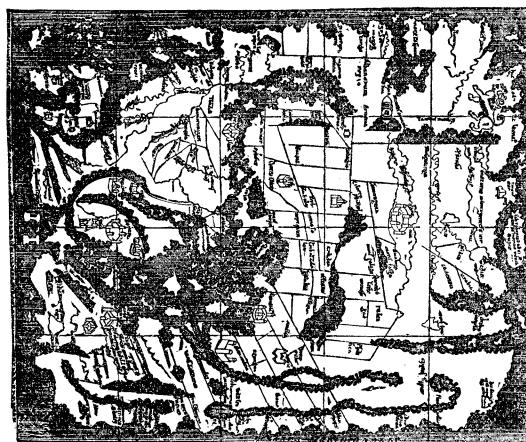
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\* *Antiquitates Americanæ*, p. 202.

† *Ibid.*, 205. *De mensura Orbis Terræ*, Letronne’s Ed., p. 38.

‡ *Ibid.*

book, the British islands were in communication, and chiefly through the medium of the monks, who, as is well known, were bold and skillful sailors, pushing far out to sea in boats of wicker or hide. How long this communication was kept up by them cannot now be determined. It is probable that it was never suspended. The Anglo-Saxon map of the tenth century shows that the sailors and geographers of England were acquainted with the Northern sea.



The Anglo Saxon Map.

Beyond Iceland was the open sea, into which Dicuil's informants, the Religious, whom he styles "clerks," had so boldly sailed, until they reached the barrier of ice which bars the course of the explorer to-day.

We have already seen that Arthur did not visit Greenland, yet that that part of the north was reached about the time of Arthur, admits of little doubt. It is true that the discovery of Greenland has generally been assigned to the period of Eric the Red, who went to Greenland in 985, yet a Bull of Pope Gregory IV., dated 770, refers to Greenland. The genuineness of this Bull cannot be questioned, nor is there any reason to suppose that the reference to Greenland was interpolated. The Bollandists may indeed think that there is some mistake,\* but the explanation is easy and natural,

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\* This is a matter of private information, but the author cannot learn that the

when we take into consideration the known activity of maritime enterprise prior to Eric the Red. Indeed, the Icelandic chronicles distinctly say that, half a century before the voyage of Eric, a great country was known at the west, being called "Ireland the Great." It would seem that this country was first reached by the Irish, whose prior discovery was conceded by the Icelanders. The Irish had described it, evidently, as a land of verdure, while the *Saga* says that Eric applied the name of "Greenland" to the part he visited, not from any fitness, but from motives of policy, saying that "men would be persuaded to go to a land with so good a name." It is nowhere pretended that the name "Greenland" originated with Eric. His own account indicates that Europeans had visited Greenland before his time, which leads to the conclusion that the Irish had been in the country, and that the reference to Greenland in the Bull of 770 is correct.\*

In the year 1187, *Giraldus Cambrensis* wrote his *Topographia Hibernica*, and in this work he speaks of Iceland, which is described as a great island three days' sail northward from Ireland. The people are represented as of few words, but truthful. *Giraldus* shows that he understood something of the nature of their government, in saying that their priests were their kings.†

Approaching the thirteenth century, the age appears to be one of maritime activity. *Necker, Abbott of Cirencester*, who died in 1217,

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Bollandists have any acquaintance with the general subject which would give weight to any opinion they might entertain.

\* On this point, see "Pre-Columbian Discovery of America by the Northmen," p. 85, and "Antiquitates Americanæ" on the Minor Narratives.

† "Est et yslandia borealium insularum maxima; trium dierum naturalium navigatione in aquilonares partes ab Hibernia remota. Gentem haec breviloquam et veridicam habet. Raro namque brevique fungens sermone, juramento non utitur; quia mentiri non novit. Nihil enim magis quam mendacium detestatur. Gens hac eodem ititur rego quo sacerdote; eodem principe quo pontifice. Penes enim episcopum tam requi quam sacerdotii jura consistunt. Haec terra girofalcones et accepitres grandes et generoses gignit et mittit. Nunquam hic aut rarissime vel coruscant fulgara vel cadunt tonitrua. Sed habent e contra pestem aliam, et longe mojorem. In anno nanque semel, vel biennio, per aliquam insulae partem ignis emergens, in modum turbinis cum vehementia spiritus excurrens, quicquid obviam offendit funditus exurit sed ignis iste unde causaliter vel infra vel desuper ortum habeat incertum habetur."—*Distinctio*, I., c. xiii., p. 95.

was acquainted with the use of the compass.\* In the fourteenth century, Barber said of the party accompanying King Robert of Scotland from Arran to Carrick, "they na nedil had na stane," showing that those things were familiar to navigators. Here, therefore, it will be necessary to introduce Nicholas of Lynn, who, in 1360, made a voyage to the high north. But before attempting the particular consideration which seems to be required, it will be necessary to glance at the condition of northern maritime enterprise during the fourteenth and fifteenth centuries. In the fourteenth century the fisheries were commonly pursued around Iceland, whose people were in regular communication with Greenland. The English also must have known of Greenland at the time, though, in common with the people of Iceland and Norway, they did not appreciate the importance of this knowledge. In the fourteenth century, proof is found both in the Icelandic and English annals of the connection between the two countries. The Icelandic contains indications of the arrival of English ships, but it is clear that their coming was so well known as to gain only a casual allusion, the interest standing connected with the news brought. The entries were made at the time, having since been extracted from the numerous writings for the convenience of students, and set down in chronological order in the language of the original. Let us, therefore, notice these entries.

In 1348, news reached Iceland that in England the mortality was so great that 200,000 persons had died.† The next year the death of English sailors at Bergen, in Norway, opposite Iceland, was reported, and recorded in the Sagas.‡ This is all that we find at present in connection with the fourteenth century in Iceland; but the reference of the Saga to the great mortality in England is confirmed by Stow's "Annales," which state that the plague reached England in 1348, touching the seaports first. Thence, no doubt, the news was at once carried by fishermen to Iceland.§ If the voyages of the

\* Bulletin de Géographie 1858, p. 177. Are Frode, in 1068, speaking of the visit paid to Iceland by Floke Vilgerderson, says that in those times seamen had no loadstone in the northern countries. The Bible Guyot, 1150, speaks of the loadstone as "un pierre laida et brumiere."

† "Islenzkir Annálar," Hafniæ, 1847, p. 276. The Icelandic is as follows: "Mannfall ógurlegt á Englendi sva at tvö hundred thousand datt nidr."

‡ *Ibid.*, 278.

§ Stow's "Annales," p. 245, Ed. 1631.

English to Iceland had possessed greater interest, there would have been some more definite notice in the Sagas. We are free, however, to admit that, early in this century, the merchant trade may have been small, as in 1328 Edward III. does not mention Iceland in his "*Pro Mercatoribus Extraneis.*" Nor does he mention Denmark or Norway, but these are included in the general language, "*omnium aliarum Terrarum et locorum extranorunt.*"\* Nevertheless, the mandate of Edward III., dated March 18th, 1354, recognizes the fact that the king maintained a fleet for service in the "parts Boreal," John de Haddon being the Admiral.† It was probably designed to protect the fishermen and merchants from pirates around the north of Britain.

In the Icelandic annals of the fifteenth century, the first entry is that of 1407, when news was received of the death of the Archbishop of York.‡ In 1412, it was recorded that five English sailors had separated from their ship and wintered in the island.§ In 1413, "thirty more fishing vessels came from England." Some of them were blown to the northern part of Iceland, and possibly to the Greenland coast.||

In 1415, six English ships sailed to Iceland, and made their port in the Westmann Islands.¶ In 1416, six ships anchored in Hafnafjord, in the southwest of Iceland.\*\* In 1419, many English ships were wrecked on the coast of Iceland, and a large number of lives were lost.†† The annals, in the present compilation, end with the year 1430, and these six entries are all that we find. If carefully considered, however, it will appear that these mentions really form *memorabilia*. This will be seen by turning to the English annals for the corresponding period. The first reference to Iceland in the *Fædera* is that of 1415, when Henry V., for the satisfaction of the King of Denmark, ordered that during the year none of his subjects should presume to visit any of "the coasts of the islands belonging to Denmark and Norway, and especially to the island of Iceland," for the purpose of fishing or trading, "otherwise than according to the ancient custom" (*aliter quam antiquitus fieri con-*

\* Rymer's *Fædera*, iv., 361.

|| *Ibid.*, p. 388.

† *Ibid.*, v., 778.

¶ *Ibid.*, p. 390.

‡ *Annalar*, p. 382.

\*\* *Ibid.*, p. 392.

§ *Ibid.*, p. 386.

†† *Ibid.*, p. 394.

*suevit.*\*\* This notice was served upon the authorities of the various seaports of England, the mayor and bailiff of Lynn, Norfolk, being notified with the rest. Here, then, we learn, in connection with 1415, that in the ancient times voyages to Iceland had become frequent. It is clear from the complaint of the Danish king that the old rules respecting traffic had been broken habitually, and that they were now to be observed, at least for one year. Of the exact nature of the ancient law we cannot speak, but it would appear as though the prohibition related to the shore fisheries, which they were not to intrude upon, and hence, when the English went to Iceland, in 1415, they harbored off the coast at the Westmann Islands. The arrival of the ships, under the circumstances, formed a noticeable event, and for this reason it was recorded. The Icelandic Annals add, immediately after mentioning their arrival, that "the ships brought letters from the King of England to the people and the chief men of Iceland, to the effect that license should be accorded to transact business, and especially that relating to the king's own ship." The Annals state that the matter was duly arranged. It will be noticed, too, that one of these ships belonged to the King of England. It was evidently a cruiser of the royal navy.

There is, then, a complete agreement between the English and the Icelandic Annals, both showing that an English fleet visited Iceland in 1415—a circumstance which should go very far to establish the general value and credibility of those records of a distant age.†

In 1416, the English were again in Iceland, but the *Fœdera* does not mention voyages until 1436, when Henry VI. issued a license to John, the Icelandic Bishop of Holem, then in London, authorizing him to engage John May, with his ship "Catherine," for a voyage to Iceland, where May, evidently an old voyager, was to act as his attorney, and transact certain business for him, the Bishop himself not wishing to undertake the voyage.‡ In 1436, Richard Weston, of London, a "stockfishmonger," was well known by the Icelanders.§

\* *Fœdera*, ix., 322.

† This agreement between the English and Icelandic authorities appears to be pointed out now for the first time.

‡ *Fœdera*, x., 645 and 659. Ed. 1877.

§ *Ibid.*, x., 762. These supplies were sent to the Bishop of Skalholt, who alone was authorized by the Synod of Denmark to supply the elements of the sacraments to the churches. See "Kirchengeschichte von Danemark und Norwegian" (Münter), III., 16.

In 1440, Henry VI. sent two ships to Iceland, with supplies to be exchanged for such commodities as the inhabitants possessed. It was feared that without this aid from England, the sacraments even would be omitted, there being neither wine nor salt in the country, and only milk and water (*lac et aquam.*)\*

In connection with the year 1445, another voyage is indicated by the Admiralty Black Book, action having been taken against William Byggeman, and two men of Lynn, who visited Iceland in a “dogger,” called the “Trinity,” and kidnapped a boy whom they brought to Swetesham and held in servitude, contrary to law. †

In 1450, a treaty was made between the Kings of Denmark and England, which prohibited trading in Iceland; but a special provision of Parliament exempted Thomas Canynges, Mayor of Bristol, from the prohibition, in consideration of his great services to Iceland. He was accordingly allowed to send two ships thither to load with fish or other commodities. His trade with Iceland was a matter of general knowledge, and throws additional light upon a certain remark by Columbus.

To avoid interrupting the course of the narrative respecting Iceland, allusion to the voyage of the Zeno Brothers was omitted in its proper chronological place. This voyage was made to Greenland, and a part of the American coast called Estotiland, and Drogio; but it is not desirable to dwell upon such a familiar theme here. It suffices to say, whatever may be the obscurity of portions of the narrative, that its authenticity never would have been questioned, if it had been understood that at the time the voyage was made the seas at the north and west were well known and frequented, of which fact ample proof has now been given. The Zeno Map, published with the narrative in 1558, shows that the Zeno family had a knowledge of Greenland that could have been obtained only during the pre-Columbian times. †

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\* *Ibid.*, x., 645.

† “ Item quod Willelums Byggemane de Suetesham magister cuiusdem navis vocatae le Trinyte, dictae vulgariter dogger, Johannis Pigot et Henrici Sorysbii de Lenna Episcopi, circa festum Exultacionis Sanctae Crucis anno dicti regis vicesimo tertio, cepit unum pueram in partibus de Islandia, et ipsum duxit in dictu navi ad ibidem usque Suetesham, adsibi serviendum, contra statuta regia in hoc parte facta.”

—*Monumenta Juridica* (Black Book), I., 273.

‡ On Zeno, see “The Sailing Directions of Henry Hudson,” p. 5; “The North-

In this connection the investigator must not overlook the voyage of Skolnus the Pole, which took place in 1476. Hakluyt says that this voyage is mentioned by Gemma Frisius and Girava.\* It is certainly referred to on an ancient globe of about 1540, preserved in Paris, and known as the Rouen Globe, whereon, near the northwest coast of Greenland, is a legend declaring that Skolnus reached that point in 1476. This globe seems to antedate Gomara (1553), the earliest author that the writer has been able to consult.

Next, attention should be directed to the voyage of Columbus, of which the Genoese himself gives the following account:

“In the month of February, 1477, I sailed a hundred leagues beyond the island of Thyle, the southern part of which is distant from the equinoctial 73 degrees, and not 63, as some wish it to be; nor does it lie upon the line where Ptolemy’s west begins, but much more toward the west. And to this island, which is as large as England, the English come for traffic, and especially those of Bristol. And at the time I was there the sea was not frozen, but in some places the tide rose 26 fathoms [feet], and fell the same.”†

men in Maine,” p. 30. Also a full discussion of the subject in the Hakluyt Society’s edition of the *voyage*, edited by Major.

\* Hakluyt makes his reference in a general way, giving neither chapter nor page. Frisius published “*De Principiis Astronomiae & Cosmographiae*,” &c., in 1530. The “*Cosmographia*” of Hieronimo Girava was printed 1556. Gomara mentions Skolnus in his “*Historia*,” c. xxxvii., Ed. 1553. See “*The Sailing Directions of Henry Hudson*,” p. 23, in connection with Wytfleet and Pontanus. For Hakluyt, see Maine Coll., S. 2, Vol. II., p. 148.

† The Italian runs as follows: “*Io navigai l’anno 1477. nel mese di Febraio oltra Tile isola cento leghe, la cui parte Australe è lontana dall’ Equinottiale settantatre gradi, et non sessantatre, come alcuni vogliono: ne giace dentro della linea, che include l’Occidente di Tolomeo, ma è molto più Occidentale. Et a quest’ isola, che è tanto grande come l’Inghilterra, vanno gl’Inglesi con le loro mercatantie, specialmente quelli di Bristol. Et al tempo, che io vi andai, non era congelestate il mare che in alcuni luoghi ascendeva ventesi braccia, et descendeva altro tanti in altezza.*” (*Historia del S. D. Fernando Colombo*, 1571, c. iv.) “Braccia” is evidently a clerical error, as the original Spanish will doubtless show, if ever found. That Columbus was familiar with the map in the Ptolemy of 1486, showing the northern regions, with Greenland as an extension of Europe, can hardly be doubted. His remark respecting Thyle appears to be intended almost as a correction of this map, on which the Orcades and Thyle are laid down north of Scotland, Thyle being in 63° N., while it appears again further north as “*Islandia*.” This double representation of Iceland on the map was a blunder, that island being laid down first according

Whoever wrote the life of the Admiral, there is no question but that he made the voyage. Finn Magnussen has pointed out an interesting confirmation of the statement of Columbus respecting the mild weather in 1477, where he shows, from the annals, the remarkable fact that in 1477 snow had not been seen at Eyafjord, in the north of Iceland, as late as March.†

To this period belongs the voyage of Robert Alcock, of Hull, who, in 1478, was commissioned by Edward IV. to send a ship of 240 tons to Iceland, which was "to reload with fish or other goods."‡ He was licensed again in 1483.

Chaucer, in the prologue to the Canterbury Tales, shows by his "Shipman" something of the activity of the British sailor in the time of Nicholas of Lynn. It is said that,

" Of nice conscience toke he no kepe,  
But of his craft to recken wel his tides,  
His stremes and his strandes him besides,  
Hlis Herberwe, his mone, and his lodemange,  
Ther was non swiche from Hull unto Cartage ; "

while

" He knew wel alle the havens, as they were,  
Fro Gotland to the Cape de finistere."

An indication more to our present purpose is found in the poem on "the Policie of Keeping the Sea," which belongs to the middle of the 15th century. At that time the northern region was so well known that the author of the poem disposes of the subject briefly :

" Of Island to write is little nede,  
Save of stockfish ; yet forthsooth, indeed,  
Out of Bristowe, and *costes many one*,  
Men have practiced by needle and stone

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to Ptolemy, and then according to the prevailing ideas of the day. This peculiarity of the map entitles it to interest as a Columbian map, though the feature referred to does not appear to have been remarked upon hitherto.

† The fact was produced from the Annals by Finn Magnussen, in "Nordisk Tidskrift for Olkyndighed," Vol. II., p. 129. It has been suggested, though without reason, that the voyage of Columbus was made in 1467. See Barrow's "Chronological History," p. 26. Columbus gives the wrong latitudes for the places visited, but this may be the fault of the editor ; while Humboldt says that they were not the result of his own observations during a rough wintry voyage. See *Examen Critique*, II., 115, and V., 214, n. In 1550 a Bristol ship was lost at Iceland. See Barrett's Bristol.

‡ *Fœdera*, XII., 94.

Thider wardes within a little while  
 Within twelve yere, and *without perill*  
 Gon and come, *as men were wont of old*  
 Of Scarborough unto the costes cold.”\*

Thus, at the time when the poet wrote, Bristol had revived her old enterprise. The maritime enterprise of this period is greatly underrated by Mr. Froude.

The sketch thus given of maritime enterprise towards the north, and especially during the 14th and 15th centuries, is quite general. It would be easy to swell the citations from various sources, among which may be mentioned the voyages to the west of Ireland so well known to Columbus, as his biography proves. Yet enough has been said to show the real character of the period in which Nicholas of Lynn flourished. The times, both before and after the general date assigned to his voyages, were marked by great activity, and expeditions to the north were so common that neither the English nor the Icelanders took the trouble to mention them, except when they stood connected with circumstances of particular interest. The intercourse between Iceland and England was so frequent that sailors like John May, who served as the representative of the Bishop of Holem, must have acquired a fair knowledge of the language spoken in that distant isle. Indeed, at one time, under the Normans, the Icelandic tongue gave a person the advantage at the courts of both England and France.†

But enough has been said to prove that the voyage of Nicholas of Lynn, in 1360, formed no novelty. It was the alleged circumstances attending his voyage that rescued his name from oblivion. His actions take their place with entire naturalness in the annals of his age, there being nothing in the nature of the voyage towards the Pole to challenge belief. But it will be proper here to speak of Nicholas himself.

Quaint Andrew Fuller, in his *Worthies of England*, says that no county “doth carry a *top* and *gallant* more high” in maritime affairs than Norfolk; and, in speaking of the seamen, bids “none be offended if a friar be put in front of all the rest.” The friar alluded to was Nicholas of Lynn.‡

\* Hakluyt. Vol. I., p. 201. Ed. 1599-1600.

† Laing’s *Heimskringla*, Vol. I., chap. viii., p. 61.

‡ After writing the greater portion of this paper we chanced to find two other men

This individual was born in Lynn, Norfolk, at the end of the thirteenth century, or at the beginning of the fourteenth. Of his ancestors nothing is known, and but few of the particulars of his life are now accessible. Richards, in his history of Lynn, has made some statements that relate to certain points, but we are unable to say how far they may be verified. It is nevertheless certain that Nicholas was a navigator and a laborious student, and that he resided for a time at Oxford. He was well known by Chaucer, who, in his treatise on the Astrolabe, speaks of him as "Frere N. Lenne," a "reverent clerke."\* Bale says that he excelled in arithmetic, geometry, music and astrology;† and it is a curious fact that the Nicholas of Chaucer's "Miller's Tale" is represented as possessing the same acquirements. Chaucer also makes him a student at Oxford, calling him "hende," or handsome Nicholas, and surrounding him with the implements of his profession :

" His almageste [Ptolemy] and bokes grate and smale,  
His astrolabre, longing for his art,  
His augrim stones, layen faire aparte,  
On shelves couched at his beddes hed,  
His press ycovered with a falding red.  
And all about there lay a gay sautrie  
On which made on nightes melodie,  
So sweetly that all the chambre rong :  
And angelus ad virginem he song."

The "Miller's Tale" also indicates the possession of certain nautical tastes on the part of the hero, and the device of the Tub may have been intended as a playful allusion to some attempted navigation by Nicholas of Lynn. It is possible, therefore, though Chaucer speaks of him with much respect in his work on the Astrolabe, that,

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of the same name, though neither of them appear to have attracted the attention of those who have written on the antiquities of Lynn. First, "Nicolas de Len," Abbot of St. Albans, in 1255, who made a visit to Rome. He is referred to in the "Grande Chronique de Matthieu, Paris," T. IV., pp. 89-100. The second is Nicolaus Prior of Lynn, who entertained John Alcock, Bishop of Ely, upon the occasion of that prelate's visit to the place. His administration of the See of Ely ended in 1500; for which fact the writer is indebted to the present Bishop of Ely, the Right Rev. Dr. Woodford. See *Libri Nigri Scaccarii*, II., 464.

\* Chaucer's "Astrolabe" (the Ed. of the Chaucer Society), p. 3.

† "Scriptorum," &c., p. 468.

in this tale, several versions of which have been brought out by the Chaucer Society, he makes an allusion to some adventure which happened while he was a student, and before he had acquired the character of a “reverent clerke.” It would appear that, like Chaucer himself, Nicholas was in favor with the famous Duke of Lancaster.

Heilbronner says that Nicholas flourished about the year 1355, and that he “ended life” a cenobite; but what portion of his life was spent at sea does not appear. It is possible that he went to the north with the Norfolk fleet, and it would seem that he was a practical navigator. However long he may have followed the sea, he at last found grateful repose within the cloisters of his convent, devoting his days to science and religion.

His voyage must have been made from the port of his native town called Lynn Regis. The town was one of great antiquity, having received its first charter from King John, this being followed by no less than eleven others, all of which, with their seals, are still carefully preserved. At a very early period Lynn was an important seaport. It contained various convents and churches. The latter, in connection with numerous crumbling antiquities, render Lynn a place of very great interest. The thoughts of the people, like the air of the town itself, were full of the ocean breeze, and even the monk in his cell felt many of those subtle influences which pervade the maritime provinces and invite men to wander abroad. In the case of Nicholas, duty may have united with natural inclination in alluring him away upon unknown seas. At all events, he became a sailor, and, as Chaucer writes : “With many a tempest hadde his berd be shake.” Thus he won his place as a mariner in the annals of his time.

Two works have been attributed to Nicholas of Lynn; the “*Inventio Fortunata*,” a copy of which he presented to Edward III., and an astronomical Kalendar, adapted more or less to practical navigation. The latter is still preserved, and its contents are indicated by Bale. It treats of the length of the days, the oppositions and conjunctions of planets, and gives a table of eclipses calculated for 75 years, together with a description of astronomical instruments.\*

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\* “Kalendarium indicans rerum locum Solis, quantitatem dierum artificialium et vulgarium, oppositiones et conjunctiones planetarum, &c., cum tabulis Eclipsium ad 75 annos et descriptione quorundam instrumentorum astronomicarum.” A recent note

The work by which Nicholas of Lynn will longest be remembered is not now to be found. It is possible that if a copy were discovered it would add little to his fame. It may have appeared in print at the end of the fifteenth century, though no mention of its publication has been pointed out. Its disappearance under any circumstances is not a matter of surprise, since of many important works once well known no copy remains to-day, while of others there are only one or two examples.

Unfortunately, we know almost as little about the voyages made from Lynn by the fellow townsmen of Nicholas as about the book in question. Many hardy mariners sailed from the port of Lynn, but of their enterprise at the north only the most scanty memorials remain. It is nevertheless clear that their activity was appreciated by Edward III., while their neighbors of Blakeney were several times favored by that king on account of their superior merit.\* But while mention has been found of no particular northern voyage from Lynn, we must not forget the fact already stated, that in 1415 the people of that place were ordered to make no voyage to Iceland except in accordance with the rules observed in ancient times. Possibly, therefore, one of the five ships reported at the north in 1415 was from Lynn.

It may also be noticed that in the ancient manuscript records of Lynn there is a reference to armour for the use of the "North Fleet."†

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on page 59 of the MS. says: "Hoc Kalendarium fecit Nicholaus de Linea Ord. B. Mariae de Monte Carmeli inter Lectores S. Theologiae Univ. Oxon. 1386, ad petitionem et complacentiam illustrissimi Principis D. Joannis Ducis Lancastriæ, incipiens a fine Kalandarii Revendi Magistri Walteri Elvenden." (Catalogi Liborum Manuscriptorum Angliae et Hiberniae," Oxford, 1697, No. 6904 (56), Wortley MSS., p. 213. John Bale gives the heads of the 13 chapters composing the work, among which is one on the Astrolabe. See "Scriptorum illustrium maioris Brytannie," &c., Bale, 1557, p. 468.J. Bale is not to be confounded with Robert, the Carmelite friar of Norwich, who became a Protestant in the reign of Edward VI. Heilbronner follows Bale in his "Hist. Matheseos Universæ," Leipsic, 1742, p. 490. According to Mr Skeat (Chaucer's Astrolabe, p. 73), Tanner follows Hakluyt. Tyrwhitt, in his "Canterbury Tales" (p. 626), shows little discrimination in declaring that Hakluyt's account is a mere fable. This is evident from the authorities Hakluyt gives. Leland's "De Scriptoribus," &c., may also be consulted, and Petsius' unfinished "Relationvm Historicum de Rebus Anglicis," I., 505: Paris, the Cramoisy Press, 1619.

\* Hakluyt, I., 120.

† Mr. Michael Mitchell, of the Town Clerk's office, Lynn, now known as "King's

There is one curious thing to be mentioned, namely, that on certain maps of the Orcades, and notably on Black's Atlas, some rocks are laid down north of Ronaldsha as "Altars of Lina." In an old folio on the Orcades, there is the following: "The Altars of Linay reach above quarter of a mile from the shore, and are visible with low spring tide."\* Thus far, however, it has been impossible to discover any tradition in connection with these rocks, though it may perhaps be admissible to suppose that, in voyaging northward, Nicholas was accustomed to stop at the Orcades, and that in some way his name became connected with these rocks, which formerly must have risen high above the sea, presenting a marked appearance suggestive of altars.†

Among the manuscripts of Sir Thomas Hare, at Stow Hall, is one which, under date of March 16th, 1337, mentions a ship at Lynn, called "The Petre," Edmund Ferrers, of Wygendale, being

Lynn," writes: "As to Nicholas of Lynn, I beg to inform you that I do not find any mention of him in the Lynn records, the earliest book of entries of which is the 'Red Register of Lynn'—which is contemporary with Nicholas. There is, however, a short entry in this register about *providing armour for the use of the 'North Fleet,'* which may probably refer to the equipment of one of Nicholas' expeditions." (Letter of October 13th, 1879.) I am also indebted to this gentleman for a variety of views of interesting objects in the town. I am indebted to the Rev. C. R. Manning, of Diss, who is secretary of the Norfolk & Suffolk Archaeological Society, and the Rev. Edward I. Alvis, of East Winch, for information contained in Richard's History of Lynn, Vol. I., p. 586, Ed. 1812. Richards says: "Like the great Roger Bacon, who lived about half a century before him, Nicholas belonged to the religious order of Grey Friars, or Franciscans, otherwise called Cordeliers and Minor Brethren." He also thinks that he died at Lynn, though unable to fix the year, and that he was buried in the dormitory of the Grey Friars; and suggests that "the Grey Friars Tower" in Lynn was used by him in making observations. It would appear, however, that Nicholas was a Carmelite.

\* "General Atlas," Edinburgh, 1851, Sheet IX.

† Mr. Anderson, of the Society of Scottish Antiquaries, well known for his knowledge of all that relates to old northern antiquities, writes, under date of Feb. 6th, 1880: "It occurs to me that the name may be accounted for without either history or legend. The old Norse word *Hlein* means a rock running out into the sea like a pier—a natural pier or breakwater—and the verb *Hleina*, from which it is derived, means to save or protect. Hence comes the name of the goddess *Hlin* (the wife of Odin), the saviour or protectress. Hence, also, I see no difficulty in the origin of a mythological name for natural objects whose every-day name was so like that of Odin's wife. *Se non e vero e ben trovate.*" It should be added, however, that the subject of the monk of Lynn was not brought to the notice of the above learned writer, a request having been made simply for some explanation of the legend on the map.

master.\* It would be useless to indulge in any speculations concerning the connections that may have existed between Nicholas and John de Haddon, Admiral of the Fleet for the "parts Boreal." The British navy was founded by Alfred the Great, and in the fourteenth century it was, in a sense, a recognized institution. In 1354 de Haddon appears to have used both Hartlepool and Newcastle-upon-Tyne as naval stations;† the latter being not far from Lynn, while the former, situated on the coast of Durham, afforded a most convenient base for operations towards Iceland, whither, as we have seen, one of the king's ships went with a trading fleet in 1415.

In the fourteenth century Ranulfus Higden wrote his well known "Polychronicon," but, though a contemporary of Lynn, he makes no reference to his voyage. Higden died about the year 1363, while the voyage of Nicholas is set down for 1360. The early part of the



Ranulfus Higden's Map, A.D. 1360.

work, where the reference to Nicholas would belong, was probably composed some time before his death, and possibly prior to 1360. Higden, therefore, may have known of Lynn and his voyage, though he fails to mention him. Higden gives a description of Iceland, based more or less on Giraldus Cambrensis, and adds a map of the world, upon the northern part of which Iceland appears as "Tile."

\* "Third Report of the Royal Commission," (1872), p. 251.

† *Fædera*, v., 778.

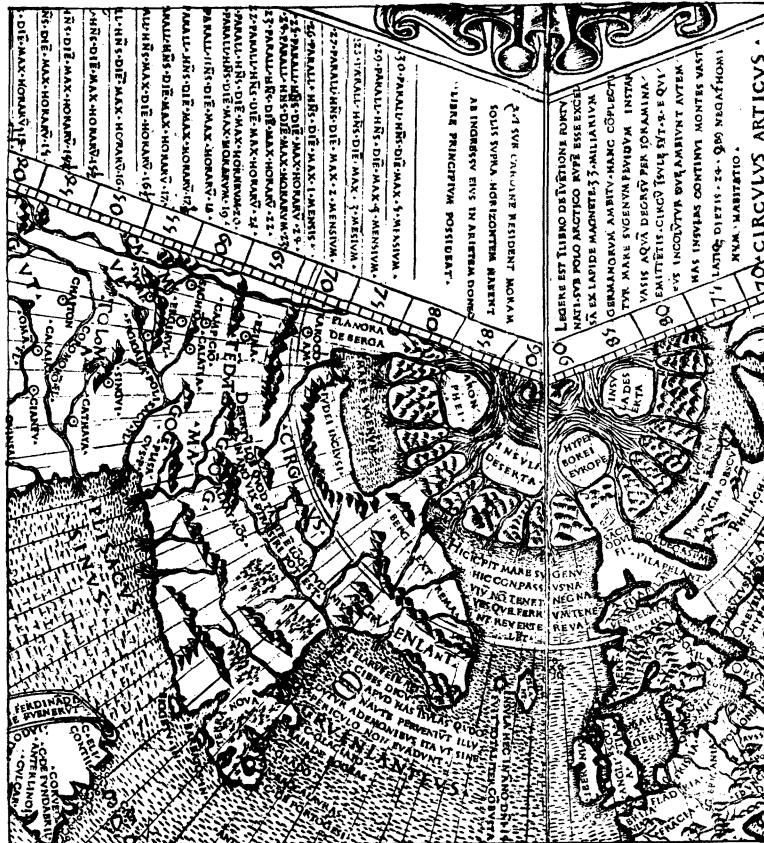
The earliest allusions to the *Inventio Fortunata* of Lynn is found upon the margin of a map by John Ruysch, which appeared at Rome in the Ptolemy of 1508. On this map is a legend somewhat to the following effect : "It is written in the Book of the Fortunate Discovery that, under the Arctic Pole, there is a high magnetic rock 33 German miles in circumference. This is surrounded by the fluid sugenum sea, that as a vase pours out water by four mouths from below. Around are islands, of which two are inhabited. Mountains vast and wide surround these islands, 24 of which deny habitation to man."\*

This would seem to indicate that the book written by Nicholas of Lynn was known to the mapmaker, while, also, it may have been known at Rome. It is evident that the polar region was drawn more or less in accordance with some plan by Nicholas, which was combined with later material. Around the magnetic rock, immediately under the pole, are four islands, "Aronphei," "Insvla deserta," "Hyperborei Evropa" and "Insvle Deserta." Outside of these islands are smaller and mountainous islands, arranged in a semi-circle, while the peninsula of "Pilapelanti," with its base resting upon Europe, pushes out into this druidic arrangement of islands, bearing up what is intended to represent a church, with the legend "Sacte Odulfi." Eastward of this peninsula is the "Provicia obscura," and the "Mare Svgenvm." Westward of "Bergi extrema" another peninsula enters the group of islands, which is pierced by "planora de Berga" at the extreme west. The "Mare Svgenvm" also fills the west. South of "Grvenlant" is "Terra Nova," or New Found-land. From the "Mare Svgenvm" the water flows northward through the four openings into the polar basin. The arrangement is curious, yet not wholly without resemblance to what is found in nature; for what is called the polar basin is fed by several vast streams pouring into it from the warm regions at the south. These streams also create counter currents, which flow southward, bearing

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\* "Legere est i Libro de Ivtione fortvnati, svb polo arctico evpē esse excelsā ex lapide magnete 33 miliarvm germanorvm ambitv. hanc cōplectivr mare svgenvm flvidvm instar vasis aqua deorsv per foramina emetettis. circv Isvle svt & eqvibvs incolvtvr dve ambivnt avtem has insvlas continvi montes vasti lati<sup>q</sup> dictis. 24 qb negat hominvm habitatio." This is obscure and appears to have suffered in the hands of the engraver. Our translation may not prove very satisfactory.

enormous quantities of the heaviest ice. Nicholas of Lynn doubtless understood something of this fact, but it would appear from the use he made of Giraldus Cambrensis, who wrote in 1187, that, unfortunately, he gave the author of *Topographia Hibernica* the credit



### A Section of the Map of Ruysch, 1508.

of being better informed than himself. The monk of Lynn was clearly indebted to Giraldus for the description of the streams. In turn Giraldus refers to "the philosophers" who describe them.\*

\* “ Non procul ab insules ex parte borealis, est maris quedam mirando vorago. Ad quani remotes partibus omnes indiques marini fluctus tanquam ex condicto confluent

This basin or whirlpool at the north, with the four entering streams, appears to be a venerable institution. Yet it may after all be founded upon what is observed to-day, in connection with the Gulf Stream and the Kuro Ciro, and may be connected with the observations of such navigators as Pytheas, who went to the north. The magnetic rock under the pole, on the map of Ruysch, or rather, we may perhaps say, of Nicholas, deserves attention, as it has been claimed that the monk had applied his mind to one of the most difficult of problems and that the magnetic mountain stands for the solution thereof.

The attention of Humboldt does not appear to have been drawn to Nicholas, but, in treating the history of the magnet, the great investigator calls attention to the fact that "on the remarkable chart of America appended to the edition of the Geography of Ptolemy published at Rome in 1508, we find the magnetic pole marked as an insular mountain north of Grvendlant." In 1545, Martin Cortez placed the magnetic pole further south, as did Sanuto in 1588.\* That Nicholas entertained fanciful notions is not at all strange. Sanuto held that if men were ever so fortunate as to reach the magnetic pole, they would experience some miraculous effect. Columbus, likewise, was full of curious fancies, holding for instance, that, west of the Azores, ships sailed up hill towards the unapproachable Paradise.† It would have been a happy thing if the false notions of Nicholas of Lynn had not misled others. First, however, it must be indicated that the magnetic mountain of Lynn was borrowed from the early philosophers and geographers. Galen reports magnetic rocks on the coasts of the Indian ocean, and St. Ambrose echoes the idea; while the Arabic geographer Edrisi, of the twelfth century, author of a Map of the World, of the year 1154, reported a magnetic mountain at the mouth of the Red sea, it being 12 miles long and surrounded by islands, acting upon

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et concurrent: qui in secreta naturae penetralia se ibi transfudentes, quasi in abyssum vorantur. Si vero navem hoc forte transire contigerit tanta rapitur et attrahitur fluctuum violentia ut eam statim irrevocabiliter vis varæitatis absorbeat. Quatuor hujus modi oceani voragine, quatuor appositio mundi partibus, philosophi describunt. Unde et tam marinos fluxos, quam etiam ælicos fatus causaliter provenire nonnulli conjectant."—Top. Hibernica, c.xiv.

\* *Cosmos*, II., 659; *Examen Critique*, III., 60.

† "Select Letters of Columbus," p. 133.

the iron in ships and holding them fast.\* In Ruysch's Ptolemy of 1508 is found a similar account, the island being in the possession of anthropophagi, or Manioles. It is surrounded by ten other islands. The magnetic attraction was so powerful there, that it was necessary in building ships to use wooden nails.† In these accounts, as in the map of Ruysch, the magnetic island stands in a circle of islands.



\* "Life of Columbus," by Goodrich, p. 48. Ed. New York, 1874.

† "Feruntur et hic aliae insulæ cotinue esse numero dece Maniolæ appellatae quibus dicunt naviæ que clavos ferreos habent detinieri ne quoniam lapis herculeus qui circa ipsa

The map of Ruysch alone is the authority for connecting Lynn's name with the magnetic mountain. The accounts preserved by Mercator and Dr. Dee do not mention the magnetic rock, the ships being driven by the currents or indraughts. Nicholas understood something of polar magnetism, and supposed that it was to be explained by the aid of a magnetic island like that of Ptolemy, and accordingly created one. It was partially suggested as hypothetical. Of the extent of his actual knowledge in connection with polar magnetism it is impossible to speak.

It will be necessary, however, to notice the blunder into which the map of Ruysch led Humboldt, who, contrary to his usual custom, hastily accepted a suggestion found in Biddle's Life of Cabot. Mr. Biddle, in seeking to exalt his hero, dwells upon what Cabot observed in connection with the variation of the compass, and says that his earliest transatlantic voyage carried him "to the very quarter where it is exhibited in a manner so sudden and striking that modern navigators seem to concur in placing there one of the magnetic poles." As respects the locality of the voyage in question, however, there is much doubt, the so-called map of Cabot being no authority on the subject.\* Mr. Biddle nevertheless continues: "There is a curious piece of evidence to show how early the northern region discovered by Cabot was associated with the alarm which this phenomenon [the variation] must, in the first instance, have excited," adding: "On the great map of the world which accompanies the edition of Ptolemy published at Rome in 1508, is the following inscription," which he gives in Latin, but which is Englished as follows: "Here the ship's compass loses its property, and no vessel with iron on board is able to get away."† On this, the author

gignit illa traheret obg hoc sup trubib ea i sicco firmari assernt." (Ruysch's Ptolemy of 1058, Lib. VII., c. ii.) On map xi., f. 165, the islands are laid down, with a legend containing the idea already expressed. See also Bergeron's "Voyages faits principalement en Asie," Tome I., p. 25; and the Ptolemy of Ruscelli, Venice, 1574, p. 328.

\* See the author's article in the "Compte Rendu" of the Americanistes, Brus-sels, 1880.

† "A Memoir of Sebastian Cabot," p. 179, Ed. 1832. The Latin is as follows: "Hic compassus naviv. no tenet nec naves que ferrum tenent revertere valet." No such absurd statement could have come from either of the Cabots.

says that "it is impossible to doubt that the reference is to the well-known effect produced there on the compass. Beneventus, who prepared the supplemental matter for this edition of Ptolemy, professes to have a knowledge of the discoveries made by Columbus, by the Portuguese, and by the English." He also refers to Fournier, who says that Cabot marked exactly in various places the dipping of the needle.\* Humboldt, in noticing this, says that Biddle "observes with justice, that a remark inscribed on the Mappemonde of Ptolemy" "appears founded on the ideas of Cabot relative to the position and proximity of the magnetic pole."† Nevertheless, a more careful examination of the general subject, in connection with Nicholas of Lynn, would have shown Humboldt that there was no reference whatever in the legend to the discoveries of Cabot, but that the reference was to the teaching contained in the monk's *Inventio Fortunati*, itself an echo of Ptolemy and the ancients. Biddle says that the inscription appears "far beyond terra nova," while Humboldt loosely says, "before or near (*pres*) New Foundland." Both are quite wrong, as the legend stands north of Greenland and Iceland, at the entrance of the polar sea, evidently being placed there for the reason that there was not sufficient room nearer the magnetic mountain. Humboldt, by the aid of Mr. Biddle, simply fell into a blunder, confusing a monastic hypothesis with the supposed record of an actual observation by Cabot. This error does not appear to have been noticed hitherto.

The arrangement of the land and water around the pole on Ruysch's map is conventional, and it may be questioned whether the great peninsula called "Grvenlant" was a part of Lynn's plan. At all events, he had ample opportunities of becoming acquainted with Greenland when making his voyage to the north, as in 1379 the Ice-

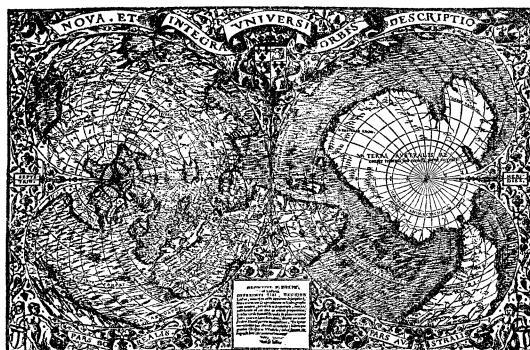
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\* " *Memoir*," &c., p. 179.

† " M. Biddle, auteur du savant *Memoir of Sebastian Cabot*, qui a paru en 1831, observe avec justesse (chap. 26, p. 177-180) qu'une remarque inscrite dans la Mappemonde de Ptolémée ajoutée à l'édition romaine de 1508, remarque d'après laquelle 'pres de Terre Neuve et l'île de Bacalaurus, la boussole ne gouverne pas, nec naves quæ ferrum tenent revertere volent,' paraît fondée sur les idées de Cabot relatives à la position et à la proximité du pôle magnétique boreal."—(" *Examen Critique*," III., 32.)

landers were still well informed respecting that country.\* Indeed, there is good reason for supposing that the map of Ruysch shows less knowledge of Greenland than Nicholas possessed, as the monk was a contemporary of the Zeni and Bardsen; for it was during the lifetime of Lynn, 1340, that Ivar Bardsen went from Norway to Greenland for the relief of the colonists there.†

Next we pass to the map of Orontius Fine, of the year 1531, which



shows the influence of Nicholas, as exerted by Ruysch; for there is no evidence at hand proving that Fine had seen the book called *Inventio Fortunata*. Fine's map represents the circumpolar region complete, and retains the four inner islands shown by Ruysch. The outer circle of islands is broken, while "Grvenlant" appears as an island widely separated from Asia. Iceland and the Orcades appear in their proper relative positions; "Baccalar," which included New Foundland and Labrador, being a part of Asia, in accordance with the Columbian idea.

The next trace of Nicholas, the monk of Lynn, is found in the work of Las Casas, written in 1552-61, where he speaks of floating islands, and refers to those of Northern Italy, mentioned by Pliny, and where he also mentions the floating pumice-stone described by

\* "Islenzkir Annálar," p. 330.

† See "The Sailing Directions of Henry Hudson," and Bardsen's Commission in "Arctike landes Gamle Geographie," p. 47.

Seneca. Passing from these cases, he mentions "certain islands which swim on the water," saying "of this kind must have been those which are called Saint Brandon, in whose history, it is said, you may read of many islands that were seen in the sea surrounding the islands of Cape Verde and the Azores, which are always in a state of conflagration, and which must be similar to those spoken of above," adding, "of the same mention is made in the book of *Inventio Fortunata*."<sup>\*</sup>

Nicholas of Lynn also appears upon the map of Mercator, 1569, whereon the polar regions are delineated more or less in accordance with the conceptions of the famous monastic voyager, while the map shows that Mercator obtained his information through Cnoyen.<sup>†</sup>

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\* A esto decia Cristóbal Colon, que podian ser aquellas islas de las que tracta Plinio, Lib. 2, c. 97, de su 'Natural Historia,' que hacia la parte del Septemtrion, socaba la mar algunas arboledas de la tierra, que tienen tan grandes raíces, que las lleva como balsas sobre el agua que desde lejos parecen islas. Ayuda á esto lo que dice Seneca en el lib. III. de 'Los Naturales,' que hay natura de piedras tan esponjosas y livianas, que hacen dellas en la India unas como islas que van nadando por el agua, y desta manera debian de ser las que dicen Sant Brandan, en cuya historia diz que se lee que fueron vistas muchas islas por la mar de las islas de Cabo Verde ó de las Azores, que siempre ardan y debian de ser como las que arriba se han dicho: de lo mismo se hace mencion en el libro llamado *Inventio fortunata*." Historias de las Indias, in "Documentos ineditos," Tom. LXII, p. 99. For the passage of Seneca, see "Œuvres Complètes," Tom. VIII., p. 230; for Pliny, Bohn's ed., p. 122.

† Mercator says: "Touching the description of the north partes, I have taken the same out of the voyage of Iames Cnoyen, of Hartzeuan Buske, which alleageth, \* \* among the rest, he learned of a certaine priest, in the King of Norwayes court, in the yeere 1364. This priest was descended from them which King Arthur had sent to inhabit those Islands, and he reported that in the yeere 1360 a certain English Frier, a Franciscan, and a Mathematician of Oxford, came into those Islands, who leaving them, and passing further by his Magicall Arte, described all those places that he sawe, and tooke the height of them with his Astrolabe, according to the forme that I, Gerard Mercator, have set down in my mappe, and as I have taken it out of the aforesaid Cnoyen. Hee sayd that those foure Indraughts were drawne into an inward gulfe or whirlepoole, with so great a force, that the ships which once entered therein, could by no meanes be driven back againe, and that there is never in those parts so much winde blowing, as might be sufficient to drive a corn mill." (The "Principal Navigations," by Hakluyt, I., 122.)

This Oxford friar referred to by Cnoyen, was none other than Nicholas of

Another reference to the subject is found in the Life of the Admiral, heretofore generally attributed to Ferdinand Columbus. The text runs as follows: "Juventius Fortunatus relates that there is an account of two islands towards the west, and a little southward than the island of Cape Verde, which skim along upon the water."\* Now, if we are correct, the writer here alludes to the *Inventio Fortunata* of Nicholas of Lynn, though the editor of the Life of the Admiral, whoever he may have been, makes the title of the book itself the name of the author. It is indeed possible that such a person as "Juventus Fortunatus" wrote on geographical subjects and hence was quoted, but the probabilities are against this view. At all events, no such work now exists in the Colombina Library at Seville, where we should expect to find it, for the reason that the library in question is none other than the library of Ferdinand Columbus, the reputed author of the Life of the Admiral. Nor does this library contain the *Inventio Fortunata* of Nicholas; which constitutes another argument, such as it is, to prove that Ferdinand did not write the book attributed to him, or at least that he did not compose the work in its present form. The catalogue of the Colombina has been searched diligently for some indication of such work, but in vain.† An inquiry has also been made respecting the

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Lynn, concerning whose work something more will be known when the fortunate antiquary draws out from its hiding-place the book of Cnoyen, which Mercator says contained his voyage "throughout all Asia, Africa and the North," a book which "was lent me in time past, by a friend of mine at Antwerpe." He adds: "After I had used it, I restored it againe; after many years I required it again of my friend, but he had forgotten of whom he had borrowed it." (Principal Navigations, "I., 445.)

\* "Et Inventio Fortunato narra, sarsi mentione di due altre Isole, volte all' occidente, & piu Australi, che le Isole de Capo verde; le quali vanno sopra l'acqua nutando." (Historie del S. D. Fernando Colombo," &c., 1571, c. viii.)

† The writer is under very great obligations to Mr. Charles H. Eder, United States Consular Agent at Seville, who, in February, 1879, carefully searched the catalogue of the Colombina. Though some of the books that once belonged to this valuable collection, which formed the library of Ferdinand Columbus, are missing, the *Inventio Fortunata* does not appear in the catalogue. Among the entries are the following: "Inventus, Presbiter, Atlas de mano," now lost; "Fortunato fiol de Passamonte en Toscano"; "Fortunato perisimus gliliū montes pietatis," &c.; "Fortunatus, Presbiter, Vita Sa Martini."

book of Knoyen, through which the author of the Life of the Admiral might have learned the story of Nicholas. This work is also wanting in the Colombina catalogue. It is nevertheless clear that Columbus made a careful examination of the arctic question. In the course of his studies he might have seen the *Inventio Fortunata*. That he had examined the subject is evident from his *Memoir or Annotations upon the Five Zones*, in which he sets forth the theory found in the "Imago Mundi," holding that the north was inhabitable, and proving it out of his own experience in 1477.\*

In 1589, Blundeville expressed an opinion derogatory to Lynn, holding that the voyage attributed to him could never have been performed without the aid of some "colde devil."†

We now pass to the celebrated Dr. John Dee, a large number of whose invaluable manuscripts were destroyed by a mob at Mortlake in 1583, who evidently knew the manuscript of Nicholas; and Hakluyt, in 1599, gives an additional testimony from the Astrologer. It runs as follows : "Ano 1360, (that is to wit, in the 34 yeere of the reigne of the triumphant King Edward the third), a frier of Oxford, being a good astronomer, went in companie with others to the most Northern Islands of the world, and there leaving his com-

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\* The "Imago Mundi" was studied and annotated by Columbus. The sixth "Inference" of Chapter VII. speaks of those who live under the pole, and of their condition. The writer has found no trace of the "Memoria" on the "Cinque Zone," mentioned by Humboldt (*Cosmos*, II., 611), who appears to speak loosely in saying that "it has now become extremely rare." See also "Examen Critique," II., 105; and V., 213.

† The following is Blundeville's account : "Moreouer, the north side of the promontorye Tabin hath 76 degrees of latitude, which place, whatsoeuer Plinie saith thereof in his fourth booke of Histories, yet I beleeve that no Roman came ever there to describe ye Promontorye. Neither doe I beleeve that the Fryer of Oxford, by virtue of his Art Magicke, euer came so nigh the Pole to measure with his Astrolabe those cold parts together with the fourre floods, which Mercator & Bernardus do describe both in the front, and also in the nether end of their maps, & unlesse hee had some colde devil out of the middle Region of the aire to be his guide, and therefore I take them in mine opinio to be meer fables." (A Briefe Description of Vniversal Mappes and Cardes, and of their vse: and also the vse of Ptholemey his Tables, by Thomas Blundeville, London, 1589, 4to, p. c. 2.) The work of Bernardus Puteanus, of Bruges, 1579, does not appear to be known. See *Voyages of John Davis*, p. lxxxviii., 1880.

pany together, hee travailed alone, and purposely described all the Northern Islands, with the indrawing seas: and the record thereof ; at his returne he delivered to the King of England. The name of which book is Inuentio Fortunata (aliter fortunæ) qui liber incipit a gradu 54 vfque ad polum. Which frier for sundry purposes after that did five several times passe from England thither, and home again.”\*

As late as 1659, the story of Nicholas of Lynn was echoed by geographers and cosmographers. Heylin wrote about the great rock at the pole, and the four indraughts or Euripi, which swallowed up ships, and added the story of the pygmies, mentioned on Mercator’s map of 1542.†

Among the maps which give more or less exactly the ideas represented by Ruysch, that made in 1572 for Munster, copies of which are found in Belleforest of 1575. Linschoten’s map of 1595 faintly shows the Euripi. The Ortelius of 1599 also shows them faintly.

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\* Hakluyt, I., 122.

† “ Under the Arctick Pole is said to be a *Black Rock* of wondrous height, about 33 leagues in compass ; the Land adjoining being torn by the sea into four great islands. For the Ocean violently breaking thorow it, and disgorging itself by 19 Channels, maketh four Euripi, or fierce *Whirlpools*, by which the waters are finally carried towards the North, and these swallowed into the Bowels of the Earth. That *Eurpius* or *Whirlpool* which is made by the *Seythic* Ocean, hath five *Inlets*, and by reason of his strait passage, and violent course, is never frozen : the other on the back of *Greenland*, being 37 leagues long, hath three inlets, and remaineth frozen three months yearly. Between these two lieth an Island, on the North of *Lappia* and *Biarmia*, inhabited as they say by *Pygmies*, the tallest of them not above four foot high. A certain *Scholer* of *Oxford* reporteth, that these four Euripi are carried with such furious violence towards some *Gulf*, in which they are finally swallowed up, that no ship is able with never so strong a Gale to *stem* the *Current*, and yet there is never so strong a wind as to blow a windmill.” (“ Cosmographie,” B. IV., p. 191, Ed. 1659.)

On the next page, Heylin adds : “ But Blundeville our Country man is of another opinion (as indeed who is not ?) neither believing that *Plinie* or any other of the *Roman* Writers came hither to describe this *Promontory* : or that the *Oxford Frier*, without the assistance of some cold *Devil* of the *middle region* of the *Aire* (and consequently able to endure all weathers) could approach so near as to measure these cold countries with his *Astrolabe*, or to take the height of this *Black Rock* with his *Jacob Staff*.”

The Mercator of Hondius, 1607, wants them; but the "Fascievlvs Geographicvs," of Matthew Quod, 1608, shows the Euripi fully, as does the Hondius of 1619, in which there is an allusion to the "fabulous Knoyen," (*Ce fabuleux Cnoxe.*) In 1625, Purchas copied the map of Hondius, who repeats the then current account of Lynn (III., 624). Further on (p. 853) he says that Mercator "was abused by a map sent unto him, of foure Euripi meeting about the North Pole."

In all these accounts there is, however, nothing to impugn the general statement respecting the voyage of Nicholas into the far North. If correctly reported, he may have fancied that he knew all about the Pole and that he had solved the problem of the magnet, by putting one of the old magnetic mountains in the north. If he was deceived, it may be said that he was not the first navigator who indulged imagination at the expense of truth. He is made to say that great tides drew ships into a fatal gulf, but if this is used to prove that he never saw the north, then the stories of the Norwegian sailors respecting the Maelstrom, found until recently on many maps, would indicate that after all they also never saw the sea. In the early times, what havoc could not the cosmographer have made of the statement of Davis, who saw the northern sea "falling down into the gulf with a mighty over-fall"? What is needed is the narrative of Nicholas, which he presented to Edward III. This may yet be drawn forth from some musty and forgotten collection.

In closing we may pause to inquire how far north the ancient navigators penetrated. The Icelandic colonists in Greenland may have reached a very high latitude during the three hundred years that they visited there, but the highest point indicated is that near Cape York, in 72° N. Upon an unpublished Spanish globe in the National Library at Paris, of the date of about 1540, is an indication which possibly may prove that some navigator had pushed through Smith's sound and Robeson channel. Many unrecorded expeditions were doubtless made into the north, and this globe may contain the memorial of some French, Spanish or Portuguese voyage not far from the year 1500. In 1500 and in 1501, expeditions went north under Contereal, who also went in 1502, never to return. On the east coast of Greenland, so far as our knowledge goes, exploration was not carried high up, though

Columbus, in going three hundred miles beyond Iceland, must have sailed close to the northern border of Greenland. If he had persevered, he would have struck the New World in 1477. The early navigators appear to have pushed northward to the pack ice, but there is no indication of their having known either Jan Mayen, or Franz Joseph's Land, though they may have seen both. The map of the Zeno Brothers, the result of the voyage of 1380, stood unequalled down to 1558, no improvement in the cartology of Greenland being made until the voyage of John Davis, in 1585. The results of his observations in Greenland were indicated by Molyneux on his globe of 1592 and on his map of 1600, which was engraved by Wright, being projected on the plan attributed to Mercator. The map of 1600 appears to be the one referred to by Shakespeare in *Twelfth Night*, as "the new map with the augmentation of the Indies."

In 1511, the Lenox Globe showed an open sea around the pole, and in 1529 the Verrazano Map left the sea still open, though in the antarctic region a great continent was beginning to appear south of Cape Horn. Herein was the partial representation of a classic myth. On Mercator's map of 1569, the antarctic continent exults in astounding proportions. Notwithstanding the great benefits conferred upon geographical science by Mercator, the knowledge of the globe in some respects was retarded in his hands, owing to the weight of his reputation. The northern region also was in time filled up, and ever since geographers have been struggling to recover the original conception of a polar sea. Shall we succeed? Of speculation on this point we have had enough, and the question remains to be decided by events. One thing, however, has become clear, namely, that the prospect of sailing to the pole by the way of Smith's Sound is far from encouraging. Manifestly, beyond a certain point, the route must be pursued by sledging. On the other hand, the route by Behring Straits is still to be fully tested. The *Jeanette* under Captain de Long, which last year passed within the ice belt, sailing for Wrangell's Land, is yet to be heard from. The establishment of the proposed colony at Discovery Bay, in latitude  $81^{\circ} 44' N.$ , also awaits its accomplishment. When this is done, as probably it will be done in the summer of 1881, explorers will be prepared to make fresh advances north of Smith's Sound, and thus enter seri-

ously upon the work of reaching the pole. Captain Nares predicts that this can never be done, as, in his judgment, the ice is too rough for rapid sledging, while a powerful current is continually carrying the ice southward. The opinion of so brave and skilful an officer is not to be treated lightly; yet there is no proof that the current always acts as it did when Captain Markham made his great sledge journey to  $83^{\circ} 20' N.$ , the highest point yet reached, nor that the ice is always in the same rough condition that made his progress so slow. These are points that remain to be decided by a permanent colony. In that sledge journey, Captain Markham's party was prostrated by scurvy, the scourge of the north, though a disease which a proper supply of provisions will obviate. Evidently, too, the season passed in the north by the Nares expedition was one of unusual severity. As it remained, Captain Markham reached a point where the water had shoaled to 70 fathoms, indicating approaching land. They turned back when only  $399\frac{1}{2}$  miles from the pole. It is not unreasonable to suppose that land actually exists a short distance north of this point. If so, that land may be gained and used as a base of operations for the regions beyond. The question of reaching the pole is now being resolved into one of equipment, while in this department something is yet to be learned. The first thing to be achieved is the establishment of the permanent colony at Discovery Bay, after which must follow the use of every appliance that science and ingenuity can devise. In this respect the Nares expedition was not altogether perfect. Indeed, no temporary expedition can meet all the conditions. Permanence in operation must characterise any successful plan to reach the pole. The explorer must be made independent of ships; he must have adequate means of resisting the cold, and antiscorbutics that will insure health. These things are certainly possible, and when secured the arctic adventurer can bide his time and await the favorable season; in the meanwhile spending his time in those general observations that will prove of such incalculable scientific advantage. Haste will form no part in that great campaign which must conduct the explorer to the pole. The work will require time, and the highest courage and perseverance. The explorer will have no assistance from the natives beyond what he gains from those who live south of Discovery Bay. That he will find, as he pushes into the far

north, any "Arctic Highlander," living in seclusion with herds of musk ox and reindeer, is a mere chimera.\* Ellsmere Land, far south of Discovery Bay, appears to be the northern limit of the Eskimo. Wherever man goes in that high northern region, he must carry the bulk of his supplies with him, as it will be found impossible to subsist by those means employed by Lieutenant Schwatka in the southward regions while engaged in the Franklin search. Everything depends upon those calculations which will enable the explorer to gauge his strength with exactness and maintain his connection with the base of those supplies which annual relief expeditions, independently organized and maintained, will furnish in unfailing abundance.

With a proper equipment, the dangers of arctic explorations are reduced to the average of the ordinary seafaring life, and experience proves that such work in the north can no longer be objected to on the ground of its risk. Indeed, arctic exploration may now be considered as an accepted branch of study, and as a wise extension of the Signal Service into the realm of perpetual cold. This being granted, the ultimate results will take care of themselves; for, with prudence, courage and perseverance, the dream of the middle ages will be realized, and the American flag will be planted at the Pole.

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\* The portion of our paper which covered this point, and showing that the Eskimo were a littoral people driven northward from the Middle Atlantic coast, has been expanded and published in the *Popular Science Monthly*, November, 1880, under the title of "The Glacial Man in America."